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How Much Can I Afford to Pay for Feeder Cattle?

David Petritz, Agricultural Economics Department

How much can you afford to pay for feeder cattle? It's always good business to carefully estimate the prospects for making a profit before buying feeder animals.

Although you can't predict accurately what the market price will be when you're ready to sell, you can determine the price necessary to recover the cost of the feeder animal plus feed and other costs of production. This "break-even" selling price compared to future cattle price predictions will help you decide whether you should buy a particular group of feeders or take alternative actions.

This publication provides data and techniques for arriving at production costs and

break-even selling prices for five alternative cattle feeding systems. Table 1 describes the five systems considered; Table 2 presents the necessary returns for three different cost levels under each system; and Tables 3 through 7 list the selling prices needed to cover the cost of the animals, feed and other variable costs for different combinations of corn and feeder cattle prices.

The five feeding systems presented here are for illustration purposes only. Table 8 is a budget form which has been provided to help you estimate the production costs and the necessary selling prices for the feeding program that is being followed on your particular farm.

Table 1. Approximate Feed Requirements and Rates of Gain for Five Alternative Cattle Feeding Programs (Average Farm Conditions and English Breeds of Cattle)

Item	System #1	System #2	System #3*	System #4	System #5
	Choice steer calves	Choice heifer calves	Choice yearlings fed to prime	Low good year- lings fed to high good-low choice on high roughage ration	Low good year- lings fed to high good-low choice on high conc. ration
Purchase weight	450 lbs.	400 lbs.	700 lbs.	700 lbs.	700 lbs.
Market weight**	1050 lbs.	900 lbs.	1250 lbs.	1080 lbs.	1080 lbs.
Gain	600 lbs.	500 lbs.	550 lbs.	380 lbs.	380 lbs.
Days on farm	290 days	263 days	220 days	212 days	165 days
Daily gain	2.10 lbs.	1.90 lbs.	2.50 lbs.	1.80 lbs.	2.30 lbs.
Feed requirements					
Corn	60 bu.	50 bu.	75 bu.	20 bu.	45 bu.
Corn silage	2.00 tons	1.75 tons	1.60 tons	4.00 tons	1.60 tons
Supplement	440 lbs.	375 lbs.	350 lbs.	320 lbs.	250 lbs.

* Consider your marketing options when planning to feed cattle to prime grade, since the market for prime cattle is limited.

** Equal to pay-weight, which is final feedlot weight minus 4% shrink.

Table 2. Approximate Production Costs and Necessary Returns for Five Alternative Cattle Feeding Programs

Item	System #1	System #2	System #3	System #4	System #5
	Choice steer calves	Choice heifer calves	Choice yearlings fed to prime	Low good year- lings fed to high good-low choice on high roughage ration	Low good year- lings fed to high good-low choice on high conc. ration
Market weight	1050 lbs.	900 lbs.	1250 lbs.	1080 lbs.	1080 lbs.
A. Cost per head					
1. 450 lbs. choice @ 50¢	\$225				
2. 400 lbs. choice @ 45¢		\$180			
3. 700 lbs. choice @ 41.5¢			\$290		
4. 700 lbs. low good @ 38¢				\$266	
5. 700 lbs. low good @ 38¢					\$266
B. Cost of gain per head					
Feed (corn, \$1.15/bu.; corn silage, \$9/ton; supplement, \$6/cwt.)	\$113	\$ 96	\$122	\$ 78	\$ 78
Other variable costs (deaths, vet., interest, taxes, gas, oil, repairs, market costs)	\$ 39	\$ 32	\$ 43	\$ 32	\$ 28
Fixed costs (labor, buildings, equip. & mach. depreciation)*	\$ 25	\$ 21	\$ 25	\$ 15	\$ 12
TOTAL COSTS (A + B)	\$402	\$329	\$480	\$387	\$384
C. Selling price per cwt. to return --					
Feed cost only	\$32.19	\$30.67	\$33.00	\$31.85	\$31.85
Feed & other variable costs	\$35.90	\$34.22	\$36.44	\$34.81	\$34.44
All costs (including fixed)	\$38.28	\$36.55	\$38.44	\$36.20	\$35.55

* These values are adjusted for average age of buildings and equipment and are equal to 75% of annual fixed cost for new facilities.

Table 3. Necessary Per-Hundredweight Selling Prices at Various Corn Prices for the Steer Calf Feeding Program (System #1) to Return Purchase Cost of Animal, Feed Cost and Other Variable Costs

Average corn price (No. 2 basis)	Necessary per-cwt. selling price* when per-cwt. purchase price for choice steer calves is --								
	\$37.50	\$40.00	\$42.50	\$45.00	\$47.50	\$50.00	\$52.50	\$55.00	\$57.50
\$0.90	\$28.70	\$29.84	\$30.98	\$32.12	\$33.26	\$34.40	\$35.54	\$36.68	\$37.82
0.95	29.00	30.14	31.28	32.42	33.56	34.70	35.84	36.98	38.12
1.00	29.30	30.44	31.58	32.72	33.86	35.00	36.14	37.28	38.42
1.05	29.60	30.74	31.88	33.02	34.16	35.30	36.44	37.58	38.72
1.10	29.90	31.04	32.18	33.32	34.46	35.60	36.74	37.88	39.02
1.15	30.20	31.34	32.48	33.62	34.76	35.90	37.04	38.18	39.32
1.20	30.50	31.64	32.78	33.92	35.06	36.20	37.34	38.48	39.62
1.25	30.80	31.94	33.08	34.22	35.36	36.50	37.64	38.78	39.92
1.30	31.10	32.24	33.38	34.52	35.66	36.80	37.94	39.08	40.22
1.35	31.40	32.54	33.68	34.82	35.96	37.10	38.24	39.38	40.52
1.40	31.70	32.84	33.98	35.12	36.26	37.40	38.54	39.68	40.82
1.45	32.00	33.14	34.28	35.42	36.56	37.70	38.84	39.98	41.12
1.50	32.30	33.44	34.58	35.72	36.86	38.00	39.14	40.28	41.42

* Important: Based on \$9/ton for corn silage and \$6/100 pounds for protein supplement. Necessary selling price is changed by 43¢/cwt. for each \$1 change in the price of 100 pounds protein supplement, and is changed by 20¢/cwt. for each \$1 change in the price of one ton of corn silage. Add \$2.38/cwt. to necessary selling price to account for fixed costs.

Table 4. Necessary Per-Hundredweight Selling Prices at Various Corn Prices for the Heifer Calf Feeding Program (System 2) to Return Purchase Cost of Animal, Feed Cost and Other Variable Costs

Average corn price (No. 2 basis)	Necessary per-cwt. selling price* when per-cwt. purchase price for choice heifer calves is --								
	\$32.50	\$35.00	\$37.50	\$40.00	\$42.50	\$45.00	\$47.50	\$50.00	\$52.50
\$0.90	\$26.87	\$28.05	\$29.23	\$30.41	\$31.59	\$32.77	\$33.95	\$35.13	\$36.31
0.95	27.16	28.34	29.52	30.70	31.88	33.06	34.24	35.42	36.60
1.00	27.45	28.63	29.81	30.99	32.17	33.35	34.53	35.71	36.89
1.05	27.74	28.92	30.10	31.28	32.46	33.64	34.82	36.00	37.18
1.10	28.03	29.21	30.39	31.57	32.75	33.93	35.11	36.29	37.47
1.15	28.32	29.50	30.68	31.86	33.04	34.22	35.40	36.58	37.76
1.20	28.61	29.79	30.97	32.15	33.33	34.51	35.69	36.87	38.05
1.25	28.90	30.08	31.26	32.44	33.62	34.80	35.98	37.16	38.34
1.30	29.19	30.37	31.55	32.73	33.91	35.09	36.27	37.45	38.63
1.35	29.48	30.66	31.84	33.02	34.20	35.38	36.56	37.74	38.92
1.40	29.77	30.95	32.13	33.31	34.49	35.67	36.85	38.03	39.21
1.45	30.06	31.24	32.42	33.60	34.78	35.96	37.14	38.32	39.50
1.50	30.35	31.53	32.71	33.89	35.07	36.25	37.43	38.61	39.79

* Break-even table is based on a price of \$9/ton for corn silage and \$6/100 pounds for protein supplement. Necessary selling price is changed by 43¢/cwt. for each \$1 change in the price of 100 pounds protein supplement, and is changed by 21¢/cwt. for each \$1 change in the price of one ton of corn silage. Add \$2.22/cwt. to necessary selling price to account for fixed costs.

Table 5. Necessary Per-Hundredweight Selling Prices at Various Corn Prices for the Choice Yearling Steers Feeding Program (System #3) to Return Purchase Cost of Animal, Feed Cost and Other Variable Costs

Average corn price (No. 2 basis)	Necessary per-cwt. selling price* when per-cwt. purchase price for choice yearling steers is --								
	\$32.50	\$35.00	\$37.50	\$40.00	\$42.50	\$45.00	\$47.50	\$50.00	\$52.50
\$0.90	\$29.28	\$30.75	\$32.22	\$33.69	\$35.16	\$36.63	\$38.10	\$39.57	\$41.04
0.95	29.60	31.07	32.54	34.01	35.48	36.95	38.42	39.89	41.36
1.00	29.92	31.39	32.86	34.33	35.80	37.27	38.74	40.21	41.68
1.05	30.24	31.71	33.18	34.65	36.12	37.59	39.06	40.53	42.00
1.10	30.56	32.03	33.50	34.97	36.44	37.91	39.38	40.85	42.32
1.15	30.88	32.35	33.82	35.29	36.76	38.23	39.70	41.17	42.64
1.20	31.20	32.67	34.14	35.61	37.08	38.55	40.02	41.49	42.96
1.25	31.52	32.99	34.46	35.93	37.40	38.87	40.34	41.81	43.28
1.30	31.84	33.31	34.78	36.25	37.72	39.19	40.66	42.13	43.60
1.35	32.16	33.63	35.10	36.57	38.04	39.51	40.98	42.45	43.92
1.40	32.48	33.95	35.42	36.89	38.36	39.83	41.30	42.77	44.24
1.45	32.80	34.27	35.74	37.21	38.68	40.15	41.62	43.09	44.56
1.50	33.12	34.59	36.06	37.53	39.00	40.47	41.94	43.41	44.88

* Break-even table is based on a price of \$9/ton for corn silage and \$6/100 pounds for protein supplement. Necessary selling price is changed by 29¢/cwt. for each \$1 change in the price of 100 pounds protein supplement, and is changed by 13¢/cwt. for each \$1 change in the price of one ton of corn silage. Add \$2.00/cwt. to necessary selling price to account for fixed costs.

Table 6. Necessary Per-Hundredweight Selling Prices at Various Corn Prices for the Low Good Yearling Steer Feeding Program on High Roughage Ration (System #4) to Return Purchase Cost of Animal, Feed Cost and Other Variable Costs

Average corn price (No. 2 basis)	Necessary per-cwt. selling price* when per-cwt. purchase price for low good yearling steers is --								
	\$30.00	\$32.50	\$35.00	\$37.50	\$40.00	\$42.50	\$45.00	\$47.50	\$50.00
\$0.90	\$28.92	\$30.62	\$32.32	\$34.02	\$35.72	\$37.42	\$39.12	\$40.82	\$42.52
0.95	29.02	30.72	32.42	34.12	35.82	37.52	39.22	40.92	42.62
1.00	29.12	30.82	32.52	34.22	35.92	37.62	39.32	41.02	42.72
1.05	29.22	30.92	32.62	34.32	36.02	37.72	39.42	41.12	42.82
1.10	29.32	31.02	32.72	34.42	36.12	37.82	39.52	41.22	42.92
1.15	29.42	31.12	32.82	34.52	36.22	37.92	39.62	41.32	43.02
1.20	39.52	31.22	32.92	34.62	36.32	38.02	39.72	41.42	43.12
1.25	29.62	31.32	33.02	34.72	36.42	38.12	39.82	41.52	43.22
1.30	29.72	31.42	33.12	34.82	36.52	38.22	39.92	41.62	43.32
1.35	29.82	31.52	33.22	34.92	36.62	38.32	40.02	41.72	43.42
1.40	29.92	31.62	33.32	35.02	36.72	38.42	40.12	41.82	43.52
1.45	30.02	31.72	33.42	35.12	36.82	38.52	40.22	41.92	43.62
1.50	30.12	31.82	33.52	35.22	36.92	38.62	40.32	42.02	43.72

* Break-even table is based on a price of \$9/ton for corn silage and \$6/100 pounds for protein supplement. Necessary selling price is changed by 30¢/cwt. for each \$1 change in the price of 100 pounds protein supplement, and is changed by 39¢/cwt. for each \$1 change in the price of one ton of corn silage. Add \$1.39/cwt. to necessary selling price to account for fixed costs.

Table 7. Necessary Per-Hundredweight Selling Prices at Various Corn Prices for the Low Good Yearling Steers Feeding Program on High Concentrate Ration (System #5) to Return Purchase Cost of Animal, Feed Cost and Other Variable Costs

Average corn price (No. 2 basis)	Necessary per-cwt. selling price* when per-cwt. purchase price for low good yearling steers is --								
	\$30.00	\$32.50	\$35.00	\$37.50	\$40.00	\$42.50	\$45.00	\$47.50	\$50.00
\$0.90	\$28.92	\$30.62	\$32.32	\$34.02	\$35.72	\$37.42	\$39.12	\$40.82	\$42.52
0.95	29.02	30.72	32.42	34.12	35.82	37.52	39.22	40.92	42.62
1.00	29.12	30.82	32.52	34.22	35.92	37.62	39.32	41.02	42.72
1.05	29.22	30.92	32.62	34.32	36.02	37.72	39.42	41.12	42.82
1.10	29.32	31.02	32.72	34.42	36.12	37.82	39.52	41.22	42.92
1.15	29.42	31.12	32.82	34.52	36.22	37.92	39.62	41.32	43.02
1.20	39.52	31.22	32.92	34.62	36.32	38.02	39.72	41.42	43.12
1.25	39.62	31.32	33.02	34.72	36.42	38.12	39.82	41.52	43.22
1.30	39.72	31.42	33.12	34.82	36.52	38.22	39.92	41.62	43.32
1.35	29.82	31.52	33.22	34.92	36.62	38.32	40.02	41.72	43.42
1.40	29.92	31.62	33.32	35.02	36.72	39.42	40.12	41.82	43.52
1.45	30.02	31.72	33.42	35.12	36.82	38.52	40.22	41.92	43.62
1.50	30.12	31.82	33.52	35.22	36.92	38.62	40.32	42.02	43.72

* Break-even table is based on a price of \$9/ton for corn silage and \$6/100 pounds for protein supplement. Necessary selling price is changed by 30¢/cwt. for each \$1 change in the price of 100 pounds protein supplement, and is changed by 39¢/cwt. for each \$1 change in the price of one ton of corn silage. Add \$1.39/cwt. to necessary selling price to account for fixed costs.

Table 8. Budget Form for Estimating Your Own Break-Even Selling Price for Cattle.

		Costs per Head	Your Figures
1. Purchase Price	_____ lbs. @ _____ /lb. =	_____	_____
2. Feed Cost			
a. Corn	_____ bu. @ _____ /bu. =	_____	_____
b. Corn silage	_____ tons @ _____ /ton =	_____	_____
c. Supplement	_____ lbs. @ _____ /lb. =	_____	_____
d. Other	_____ @ _____ / _____ =	_____	_____
e. Other	_____ @ _____ / _____ =	_____	_____
Total Feed Cost		_____	_____
3. Other Variable Costs			
a. Veterinary and medicine		_____	_____
b. Death loss (2% of Line 1 for calves, 1% for yearlings)		_____	_____
c. Marketing, commission charges, trucking expense ^{1/}		_____	_____
d. Power, fuel, equipment repair ^{2/}		_____	_____
e. Interest, insurance, taxes on feed and cattle ^{3/}		_____	_____
f. Miscellaneous		_____	_____
Total Variable Cost		_____	_____
4. Fixed Costs			
a. Buildings and equipment ^{4/}		_____	_____
b. Labor _____ hrs. @ _____ /hr. ^{5/}		_____	_____
Total Fixed Cost		_____	_____
5. Total of All Costs (1 + 2 + 3 + 4)		_____	_____
6. Necessary Selling Price to Return			
		Total Cost per Head	Necessary Selling Price per Cwt. ^{6/} Your Figures
Cost of feeder and feed costs (1 + 2)		_____	_____
All variable costs (1 + 2 + 3)		_____	_____
All costs (1 + 2 + 3 + 4)		_____	_____

^{1/} Include commission cost of purchasing feeder animal and hauling to farm, and commission cost of marketing fed animal and hauling to market.

^{2/} Power, fuel and equipment repair costs estimated at \$3 to \$5 per head.

^{3/} Equal to 8.5% (.085) times the following: purchase price of steer plus value of corn fed plus value of corn silage fed plus one-half of the value of supplement, salt and mineral fed. This value is then multiplied by the fraction of the year that is in the feeding period.

^{4/} Equal to 14% of the current investment in shelter, silage storage, and feed handling and other equipment associated with the cattle feeding enterprise. It is assumed that storage for corn is included in the price of corn.

^{5/} Five to 8 hours per head typically required with long-fed cattle requiring the larger amount.

^{6/} Divide costs per head by market weight (pay weight) per head.

Historic Document

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